Online Ethics Center
FOR ENGINEERING AND SCIENCE

Life and Environmental Science Ethics: Syllabi, Lesson Plans, and Other Curricular Materials

Author(s)

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Year

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Description

These course materials cover topics related to Life and Environmental Science ethics including syllabi, class plans, short courses, etc.

Body

Center for Bioethics and Social Sciences in Medicine. “Informed Consent,” University of Michigan, 2013. https://cbssm.med.umich.edu/how-we-can-help/tools-and-resources/informed-consent.

- A downloadable course and course materials to conduct informed consent training at your site. This workshop (developed by Dr. Susan Goold of CBSSM) has been specially designed for all research personnel who obtain consent from human volunteers.

Center for Science, Ethics & Public Policy. “Responsibility and Integrity in Science & Engineering.” University of Delaware, 2011.

http://www.sepp.udel.edu/node/14.html.

- "Originally funded by the NSF, the RAISE program (Responsibility and Integrity in Science and Engineering) is currently offered as a regular graduate seminar, PHIL-613, 'RAISE: Research Ethics'. The RAISE program covers all of the components of responsible conduct of research in depth (fabrication and falsification of data, criteria for authorship, plagiarism, conflicts of interests, intellectual property, treatment of experimental subjects, and whistleblowing). The seminar prepares graduate students and post docs to serve as ethics educators in their fields, a skill in increasing demand as funding agencies, regulators, and the public become ever more alert to issues in and failures of responsible conduct of research."

Life Science Teaching Resource Community. "LifeSciTRC.Org - Bioethics 101 - Lesson 1: Introduction to Bioethics." Life Science Teaching Resource Community, 2010. https://www.lifescitrc.org/resource.cfm?submissionID=5114.

- This is a Word document in which students are introduced to the characteristics of an ethical question by participating in the discussion of an ethical dilemma involving the distribution of a scarce resource — flu vaccine — during a flu outbreak. Students are asked to determine the best course of action in the face of conflicting choices, while examining the underlying values that serve as a basis for their reasoning.

Life Science Teaching Resource Community. "LifeSciTRC.Org - Bioethics 101 - Lesson 2: Principles of Bioethics." Life Science Teaching Resource Community, 2010. https://www.lifescitrc.org/resource.cfm?submissionID=5624.

- This Word document outlines a lesson focused on Principles of Bioethics. Students will consider concepts of fairness, respect, and 'doing good'. Students apply bioethical principles of Respect for Persons, Maximize Benefits/Minimize Harms, and Justice to the Pandemic Flu ethical dilemma they were introduced to in Lesson 1.

Life Science Teaching Resource Community. “LifeSciTRC.Org - Bioethics 101 - Lesson 3: Finding the Stakeholders.” Life Science Teaching Resource Community, 2010. https://www.lifescitrc.org/resource.cfm?submissionID=5625.

- This is a Word document in which students read a case study about Dennis, a 14-year old boy who has been diagnosed with leukemia. Doctors treat the leukemia with chemotherapy, which dramatically reduces the number of Dennis’ blood cells. Dennis refuses life-saving blood transfusions because they conflict with his religion. Students identify ethical questions to explore and consider how the Principles of Bioethics (Respect for Persons, Maximizing Benefits/Minimizing Harms, and Justice) relate to the question. Students then identify the stakeholders — the people or institutions affected by the outcome — and work in small groups to clarify stakeholder values, interests, and concerns. Stakeholder groups then present their positions to the class as a group.

Life Science Teaching Resource Community. “LifeSciTRC.Org - Bioethics 101 - Lesson 4: Making a Strong Justification.” Life Science Teaching Resource Community, 2010. https://www.lifescitrc.org/resource.cfm?submissionID=5626.

- This is a Word document allowing students to learn the characteristics of a strong justification, then applying those to a decision about a bioethical question. Students brainstorm what makes a weak justification, and are then primed to identify what makes a strong justification through their participation in a silent debate. Students refer to a case study for further learning.

Life Science Teaching Resource Community. “LifeSciTRC.Org - Bioethics 101 - Lesson 5: Putting It All Together.” Life Science Teaching Resource Community, 2010. https://www.lifescitrc.org/resource.cfm?submissionID=5627.

- This Word document allows students to consider the case of a young doctor hired by a U.S. pharmaceutical company to test a new antibiotic in Nigeria, during a meningitis epidemic. Students work through a Decision-Making Framework in small groups, in which they identify the ethical question, determine which facts are known or unknown, consider the values of different

stakeholder groups, generate possible solutions, and then make and justify a decision about the case. This is a jigsaw exercise, in which students first meet in ‘like’ stakeholder groups to become experts in the values and concerns of that group. Teams are then rearranged so that each new group has students from different stakeholder viewpoints. After sharing the views and values of each stakeholder group with their peers, groups work together to generate options for solutions to the case study. Lastly, students come to individual decisions about the case and write a thorough justification.

Markkula Center for Applied Ethics. “A Short Course in Environmental Ethics: Introduction.” Santa Clara University, 2009. https://www.scu.edu/environmental-ethics/short-course-in-environmental-ethics/.

- "This short course introduces the key features of environment ethics for an audience without a background in ethics. It is written specifically to help students - from high school to adult learners -- to recognize and use moral language to describe how they value the earth."

Science, Technology, & Society Initiative. “Online Curriculum for Science and Engineering Ethics.” University of Massachusetts Amherst, 2009. https://www.umass.edu/sts/ethics/online/EthicsResources/2009-EdMedia-Ethics-Extended.html.

- Not exclusive to life sciences: "We describe curriculum design principles, online activities, and content materials for an online "Ethics for Science and Engineering" educational system geared toward graduate students and international professional contexts (though applicable to undergraduate students and science/engineering ethics education in general). Contributions relative to related projects include: (1) A more fully elaborated analysis of target skills (and learning objectives) for ethical thinking; (2) In depth guidelines for using and creating ethics curriculum, including an extensive list of "driving questions" and a description of online activity types; and (3) A special focus on how online dialog can support the target skills and learning objectives. Planned evaluations and plans to port the online content to an intelligent coached inquiry learning environment are briefly described."

Society for Neuroscience. "Responsible Conduct of Research Short Courses." Society for Neuroscience, 2021. https://www.sfn.org/careers/career-tools-and-resources/responsible-conduct-of-research-short-courses.

- These are two half- day courses, one on "Record Keeping and Data Management for High-Quality Science" and one regarding "Optimizing Experimental Design for High-Quality Science." They held a third in 2017, "Neuroethics and Public Engagement," that you may also be able to request, though it's not listed here.

Tantillo, Jim. “Applied Environmental Philosophy Syllabus." 2016. http://www.peasoup.us/wp-content/uploads/2016/10/Tantillo-Syllabus-NR-4330-2016.pdf.

- Seminar focused on environmental philosophy considered as an academic field.

W. K. Kellogg Chair in Agricultural, Food & Community Ethics. “Courses.” Michigan State University, ND. https://www.canr.msu.edu/kelloggchair/courses.

- Paul Thompson's research has centered on ethical and philosophical questions associated with agriculture and food, and especially concerning the guidance and development of agricultural techno-science. This page contains syllabi to several courses he has taught. OEC may be interested in the courses from Fall 2009, Fall 2010, Spring 2010, Fall 2012, Fall 2013, Spring 2014.

Contributor(s)

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Resource Type

Bibliography

Discipline(s)

Life and Environmental Sciences
Biotechnology